

Claims:

1. A method for coating a filamentous article comprising applying a voided or otherwise substantially uneven coating to at least some of the exposed portion of a filamentous article and passing the substantially unevenly-coated filamentous article through an improvement station comprising a plurality of coating-wetted rolls that contact and re-contact the wet coating at different positions along the length of the filamentous article, wherein the periods of the rolls improve the uniformity of the coating.

5

10 2. A method according to claim 1 wherein the voided or otherwise substantially uneven coating is applied by dripping the coating liquid onto the filamentous article or onto a roll.

15 3. A method according to claim 1 wherein the voided or otherwise substantially uneven coating is applied by spraying the coating liquid onto the filamentous article or onto a roll.

4. A method according to claim 1 wherein the substantially uneven coating is periodically applied and the application period is adjusted to improve the uniformity of the coating.

20 5. A method according to claim 1 comprising at least three rolls.

6. A method according to claim 1 wherein the rolls have the same period of contact with the filamentous article.

25 7. A method according to claim 1 wherein the rolls do not all have the same period of contact with the filamentous article.

8. A method according to claim 7 wherein the rolls all have different periods of contact with the filamentous article.

9. A method according to claim 7 wherein the rotational periods of the rolls are not periodically related.

10. A method according to claim 7 wherein the filamentous article has at least five contacts with the rolls following application of the substantially uneven coating.
11. A method according to claim 7 wherein the filamentous article has at least 5 eight contacts with the rolls following application of the substantially uneven coating.
12. A method according to claim 1 wherein the filamentous article has at least 13 contacts with the rolls following application of the substantially uneven coating.
- 10 13. A method according to claim 1 wherein the filamentous article has a direction of motion and the direction of rotation of at least one of the rolls is the same as the direction of motion.
14. A method according to claim 13 wherein the direction of rotation of at least two of the rolls is the same as the direction of motion.
- 15 15. A method according to claim 13 wherein the direction of rotation of all the rolls is the same as the direction of motion.
16. A method according to claim 15 wherein there is substantially no slippage between the rolls and the filamentous article.
17. A method according to claim 1 wherein at least one of the rolls is grooved.
- 20 18. A method according to claim 1 wherein all of the rolls are grooved.
19. A method according to claim 1 wherein a voided coating is applied to the filamentous article and converted by contact with the rolls to a void-free coating.
20. A method according to claim 1 wherein the coating is converted to have an average caliper from 1 to about 10 micrometers.

21. A method according to claim 1 wherein the coating is converted to have an average caliper from 1 to about 5 micrometers.
22. A method according to claim 1 wherein the filamentous article comprises an optical fiber.
- 5 23. A method for coating a filamentous article comprising applying a voided or otherwise substantially uneven coating to a rotating substrate, contacting the coating with a plurality of coating-wetted rolls that contact and re-contact the coating at different positions around the circumference of the rotating substrate, and transferring the coating to the filamentous article.
- 10 24. A method according to claim 23 wherein at least three rolls contact the wet coating on the rotating substrate.
25. A method according to claim 24 wherein the rolls have different periods of contact.
- 15 26. A method according to claim 23 wherein at least five rolls contact the wet coating on the rotating substrate.
27. A method according to claim 23 wherein the coating is applied as a pattern of stripes.
28. A method according to claim 23 wherein the rolls comprise disks whose peripheral edges contact a coating-wetted groove in the rotating substrate.
- 20 29. A method according to claim 23 wherein the rotating substrate comprises a transfer belt.
30. A device comprising a coating station that directly or indirectly applies a substantially uneven coating to at least some of the exposed portion of a filamentous article and an improvement station comprising two or more rotating rolls that periodically contact and re-contact the wet coating at different positions along the length of the filamentous article, wherein the periods of the rolls improve the uniformity of the coating.

- 31. A device according to claim 30 wherein the coating station drips the coating liquid onto the filamentous article or onto a roll.
- 32. A device according to claim 30 wherein the coating station sprays the coating liquid onto the filamentous article or onto a roll.
- 5 33. A device according to claim 30 wherein the coating station periodically applies the coating liquid and the application period can be adjusted to improve the uniformity of the coating.
- 34. A device according to claim 30 comprising at least three rolls.
- 10 35. A device according to claim 30 wherein the rolls have the same period of contact with the filamentous article.
- 36. A device according to claim 30 wherein the rolls do not all have the same period of contact with the filamentous article.
- 37. A device according to claim 36 wherein the rolls all have different periods of contact with the filamentous article.
- 15 38. A device according to claim 36 wherein the rotational periods of the rolls are not periodically related.
- 39. A device according to claim 36 wherein the filamentous article has at least five contacts with the rolls following application of the substantially uneven coating.
- 20 40. A device according to claim 36 wherein the filamentous article has at least eight contacts with the rolls following application of the substantially uneven coating.
- 41. A device according to claim 30 wherein the filamentous article has at least 13 contacts with the rolls following application of the substantially uneven coating.

42. A device according to claim 30 wherein the filamentous article has a direction of motion and the direction of rotation of at least one of the rolls is the same as the direction of motion.

43. A device according to claim 42 wherein the direction of rotation of at least two of the rolls is the same as the direction of motion.

5 44. A device according to claim 42 wherein the direction of rotation of all the rolls is the same as the direction of motion.

45. A device according to claim 44 wherein there is substantially no slippage between the rolls and the filamentous article.

10 46. A device according to claim 30 wherein at least one of the rolls is grooved.

47. A device according to claim 30 wherein all of the rolls are grooved.

48. A device according to claim 30 wherein a voided coating is applied to the filamentous article and converted by contact with the rolls to a void-free coating.

15 49. A device according to claim 30 wherein the coating is converted to have an average caliper from 1 to about 10 micrometers.

50. A device according to claim 30 wherein the coating is converted to have an average caliper from 1 to about 5 micrometers.

51. A device comprising a coating station that applies a substantially uneven coating to a rotating substrate, an improvement station comprising two or more rotating rolls that periodically contact and re-contact the wet coating at different positions along the length of the rotating substrate whereby the coating becomes more uniform, and a transfer station for transferring the resulting more uniform coating to the filamentous article.

20 52. A device according to claim 51 comprising at least three rolls that contact the wet coating on the rotating substrate.

53. A device according to claim 52 wherein the rolls have different periods of contact.

54. A device according to claim 51 comprising at least five rolls that contact the wet coating on the rotating substrate.

5 55. A device according to claim 51 wherein the coating station applies a pattern of stripes.

56. A device according to claim 51 wherein the rolls comprise disks whose peripheral edges contact a coating-wetted groove in the rotating substrate.

57. A device according to claim 51 wherein the rotating substrate comprises a transfer belt.

10